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Making an Embedded DBMS JIT-friendly (Artifact)*

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Abstract

This artifact contains: the SQPyte prototype, a JIT for executing SQLite queries; and PyPy-SQPyte, a version of the PyPy Python VM which embeds SQPyte. In addition, a benchmark suite is included, which allows performance comparison against standard SQLite and the Java embedded database H2.

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1 Scope

The artifact is designed to support repeatability of the SQPyte experiments. Using the artifact, users can benchmark SQPyte with the benchmarks suite described in the paper, as well as inspect and understand the implementation of SQPyte.

2 Content

The artifact package includes:

- SQPyte, our prototype JIT for executing SQLite queries.
- PyPy-SQPyte, a version of PyPy that contains the `sqpyte` module that bridges to SQPyte.
- A set of benchmarks for evaluating SQPyte and comparing it against standard SQLite and H2.
- Scripts for analyzing benchmarking results and for producing Latex tables from them.
- Detailed instructions for using the artifact and for rebuilding it from scratch, provided as an `index.html` file.

To simplify repeatability of our experiments, we provide a VirtualBox disk image containing an Ubuntu 15.10 distribution. The image contains pre-built programming language VMs and other requirements.

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† Work performed on secondment at King's College London.

3 Getting the artifact

The artifact endorsed by the Artifact Evaluation Committee is available free of charge on the Dagstuhl Research Online Publication Server (DROPS). The latest version of our code is available from our home page: `http://soft-dev.org/pubs/files/sqpyte/`

4 Tested platforms

The artifact is known to work on any platform running Oracle VirtualBox version 5 (`https://www.virtualbox.org/`) with at least 16 GiB of free space on disk and at least 4 GiB of free space in RAM.

5 License

MIT (and others, see README for details)

6 MD5 sum of the artifact

26f0b52ea00e72261ac82b02d031ee0c

7 Size of the artifact

6 GB

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